Historical Development of Earnings Management Models

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Aim

The aim of the paper is **to clarify the historical development of earnings management models.**

Contribution responds to the current issue of Earnings Management initiatives.

We have been dealing with EM initiatives since at least the 1960s. Initial studies came from the USA. Due to the globalization, awareness of EM techniques and models created abroad is also reaching European countries. Especially after the recent economic fluctuations (financial crisis in 2009; COVID-19 in 2020), the application of EM principles in companies with an effort to achieve a balanced profit can be assumed. The issue of earnings management has begun to be associated with the issue of its measurement. The problem is a large number of models, so choosing one is not easy. Although earnings management issue has been investigated under various hypotheses, there is no agreement on a uniform detection or measurement of earnings management practices.

A number of earnings management models can be found in studies. Many of them were created recently, others are older. Most originated abroad.

Theoretical Background

▶ Many definition of earnings management can be found

▶ *White Earnings Management*

▶ *Gray Earnings Management*

▶ *Black Earnings Management*

▶ Studies tending to a less negative way of perceiving EM are mainly from recent decades. These are studies by the authors Beneish (published in 2001), Sankar and Subramanyam (published in 2001), Scott (published in 2003) or Fields, Lys and Vincent (published in 2001). Older studies by the authors (Healy, Wahlen, Levitt, Shipper, Tzur or Yaari) perceive earnings management initiatives as an effort by the company to reduce the transparency of the profit reported in the financial statements.

▶ Earnings management realized by using accounting principles is called *accrual-based earnings management*. On the other hand, the earnings management realized through real operating activities is called *real earnings management.*

Methodology

▶ Using statistical methods to analyze articles, publications, or books is known as bibliometrics.

▶ Scientometrics, also defined as the sub-field of bibliometrics, deals with the analysis of scientific publications.

▶ Bibliometrics analysis has a wide application in the different areas of science.

▶ Most often, bibliometrics or scientometrics is associated with the evaluation of science at various levels. Historical development in selected science fields, as well as hidden relationships between issues, authors, or disciplines, can be defined based on the results of bibliometrics analysis. Bibliometric methods are also used to identify the most current topics of scientific research, or the level of their obsolescence.

Results

▶ Basic methods of earnings management measurement.

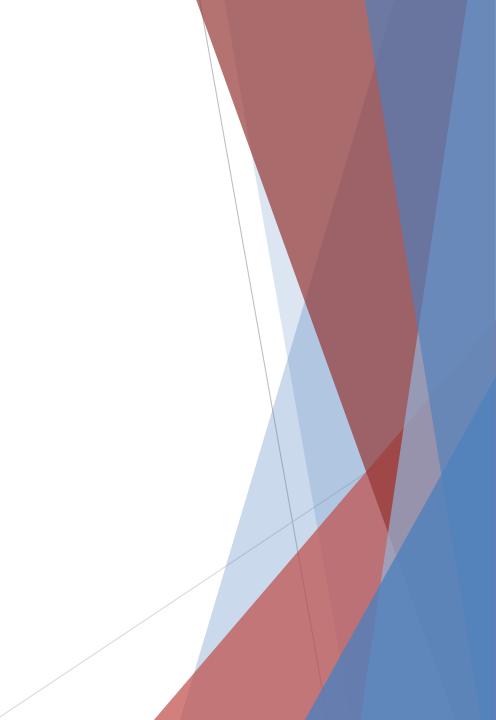| METHOD |
| --- |
| *Graphical Methods Based On Time Series Data* |
| *Mathematical Modeling Of Specific Accruals* |
| *Mathematical Modeling Of Total Discretionary Accruals Using Time Series Data* |
| *Mathematical Modeling Of Total Discretionary Accruals Using Cross-Sectional Abnormal Accruals* |

Results

▶ Especially after 2000, the group of authors has dealt with the issue of so-called **real earnings management.**

▶ Cho, Choi and Kwon dealt with the role of employee on financial reporting. They investigated the relationship between real earnings management and employee length of employment. Authors Hamza and Kortas dealt with the impact of weaker regulatory environment on earnings management. Jeong and Choi showed the existence of the negative association that real earnings management prevents the market from assessing companies' future earnings reflected in the current stock prices. The results of work by Kim, Udawatte and Yin shows that the higher the CSR level is, the lower the EM initiatives level are in the company. In connection with the development of information and communication technologies, also modeling using neural networks penetrates into the issue of earnings management.

Results

- The most frequently used calculation methods of EM chronologically arranged.

METHOD	AUTHORS	YEAR
Graphical Methods Based On Time Series Data	Gordon	1964
	Dopuch and Drake	1966
	Archibald	1967
Mathematical Modeling Of Specific Accruals	Gordon et al.	1966
	Copeland,	1968
	White	1970
	Dascher and Malcom	1970
	Barefield and Comiskey	1972
	Beidleman	1973
Mathematical Modeling Of Total Discretionary Accruals Using Time Series Data	Healy	1985
	Kaplan	1985
	DeAngelo	1986
	McNichols and Wilson	1988
	Jones	1995
	Dechow et al.	1996
	Kothari and Watts	1966
	Beneish	1997
	Young	1999
Mathematical Modeling Of Total Discretionary Accruals Using Cross-Sectional Abnormal Accruals	DeFond and Jiambalvo	1994
	Subramanyam	1996
	Pope and Young	2000

Results

- Earnings management models chronologically arranged.

YEAR	AUTHORS
1981	Ronen and Sadan Model
1985	Healy Model
1986	DeAngelo Model
1988	McNichols and Wilson Model
1991	Bartov Model
1991	Jones Model
1991	Industry Model (Dechow, Sloan and Sweeney)
1994	Defond and Jiambal Model
1995	Modified Jones Model
1995	Kang and Sivaramakrishnana Model
1996	Shivakumar Model
1997	Key Model
1998	Theo et al. Model
1999	Beneish Model
1999	Kasznikov Model
2003	Dechov, Richardson and Tuma Model
2004	Larcker and Richardson Model
2005	Kothari et al. Model
2006	Yoon at el. Model
2006	Roychowdhury Model
2011	Islama et al. Model
2012	Dechov et al. Model
2013	Dunmor Model

Thank you for your attention